

Doo Seok Jeong

List of Publications by Year in descending order

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123
papers

5,989
citations

126907

33
h-index

71685

76
g-index

127
all docs

127
docs citations

127
times ranked

6725
citing authors

#	ARTICLE	IF	CITATIONS
1	Emerging memories: resistive switching mechanisms and current status. Reports on Progress in Physics, 2012, 75, 076502.	20.1	881
2	Nanofilamentary resistive switching in binary oxide system; a review on the present status and outlook. Nanotechnology, 2011, 22, 254002.	2.6	530
3	A Review of Three-Dimensional Resistive Switching Crossbar Array Memories from the Integration and Materials Property Points of View. Advanced Functional Materials, 2014, 24, 5316-5339.	14.9	319
4	Identification of a determining parameter for resistive switching of TiO ₂ thin films. Applied Physics Letters, 2005, 86, 262907.	3.3	317
5	Coexistence of Bipolar and Unipolar Resistive Switching Behaviors in a Pt/TiO ₂ /Pt Stack. Electrochemical and Solid-State Letters, 2007, 10, C51.	2.2	293
6	Memristors for Energy-Efficient New Computing Paradigms. Advanced Electronic Materials, 2016, 2, 1600090.	5.1	272
7	Characteristic electroforming behavior in Pt/TiO ₂ /Pt resistive switching cells depending on atmosphere. Journal of Applied Physics, 2008, 104, .	2.5	262
8	Nonvolatile Memory Materials for Neuromorphic Intelligent Machines. Advanced Materials, 2018, 30, e1704729.	21.0	187
9	Towards artificial neurons and synapses: a materials point of view. RSC Advances, 2013, 3, 3169.	3.6	171
10	Mechanism for bipolar switching in a Pt/TiO ₂ /Pt resistive switching cell. Physical Review B, 2009, 79, .	10.8	108
11	Wafer-scale growth of MoS ₂ thin films by atomic layer deposition. Nanoscale, 2016, 8, 10792-10798.	5.6	139
12	Giant electrode effect on tunnelling electroresistance in ferroelectric tunnel junctions. Nature Communications, 2014, 5, 5414.	12.8	123
13	Resistive Switching in Pt/Al ₂ O ₃ /TiO ₂ /Ru Stacked Structures. Electrochemical and Solid-State Letters, 2006, 9, C343.	2.2	107
14	Electrochemical metallization cells—blending nanoionics into nanoelectronics?. MRS Bulletin, 2012, 37, 124-130.	3.5	107
15	Impedance spectroscopy of TiO ₂ thin films showing resistive switching. Applied Physics Letters, 2006, 89, 082909.	3.3	99
16	Tunneling-assisted Poole-Frenkel conduction mechanism in HfO ₂ thin films. Journal of Applied Physics, 2005, 98, 113701.	2.5	80
17	Comparison between atomic-layer-deposited HfO ₂ films using O ₃ or H ₂ O oxidant and Hf[N(CH ₃) ₂] ₄ precursor. Applied Physics Letters, 2004, 85, 5953-5955.	3.3	78
18	Resistive switching in a Pt/TiO ₂ /Pt thin film stack—a candidate for a non-volatile ReRAM. Microelectronic Engineering, 2007, 84, 1982-1985.	2.4	75

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19	Tungsten carbide nanowalls as electrocatalyst for hydrogen evolution reaction: New approach to durability issue. <i>Applied Catalysis B: Environmental</i> , 2017, 203, 684-691.	20.2	74
20	Titanium dioxide thin films for next-generation memory devices. <i>Journal of Materials Research</i> , 2013, 28, 313-325.	2.6	67
21	Influence of carrier injection on resistive switching of TiO ₂ thin films with Pt electrodes. <i>Applied Physics Letters</i> , 2006, 89, 162912.	3.3	66
22	Growth Characteristics of Atomic Layer Deposited TiO ₂ Thin Films on Ru and Si Electrodes for Memory Capacitor Applications. <i>Journal of the Electrochemical Society</i> , 2005, 152, C552.	2.9	64
23	Reasons for obtaining an optical dielectric constant from the Poole-Frenkel conduction behavior of atomic-layer-deposited HfO ₂ films. <i>Applied Physics Letters</i> , 2005, 86, 072903.	3.3	60
24	Leaky Integrate-and-Fire Neuron Circuit Based on Floating-Gate Integrator. <i>Frontiers in Neuroscience</i> , 2016, 10, 212.	2.8	55
25	Self-rectifying resistive memory in passive crossbar arrays. <i>Nature Communications</i> , 2021, 12, 2968.	12.8	53
26	Frustration of Negative Capacitance in Al ₂ O ₃ /BaTiO ₃ Bilayer Structure. <i>Scientific Reports</i> , 2016, 6, 19039.	3.3	44
27	Effect of Ge Concentration in Ge _x Se _{1-x} Chalcogenide Glass on the Electronic Structures and the Characteristics of Ovonic Threshold Switching (OTS) Devices. <i>ECS Solid State Letters</i> , 2013, 2, Q75-Q77.	1.4	41
28	Relaxation oscillator-realized artificial electronic neurons, their responses, and noise. <i>Nanoscale</i> , 2016, 8, 9629-9640.	5.6	39
29	Reliability of neuronal information conveyed by unreliable neuristor-based leaky integrate-and-fire neurons: a model study. <i>Scientific Reports</i> , 2015, 5, 9776.	3.3	38
30	Study of the negative resistance phenomenon in transition metal oxide films from a statistical mechanics point of view. <i>Journal of Applied Physics</i> , 2006, 100, 113724.	2.5	36
31	A Study on the Scalability of a Selector Device Using Threshold Switching in Pt/GeSe/Pt. <i>ECS Solid State Letters</i> , 2013, 2, N31-N33.	1.4	36
32	Photocurrent enhancements of organic solar cells by altering dewetting of plasmonic Ag nanoparticles. <i>Scientific Reports</i> , 2015, 5, 14250.	3.3	36
33	SnO ₂ thin films grown by atomic layer deposition using a novel Sn precursor. <i>Applied Surface Science</i> , 2014, 320, 188-194.	6.1	35
34	Catalytic activity for oxygen reduction reaction on platinum-based core-shell nanoparticles: all-electron density functional theory. <i>Nanoscale</i> , 2015, 7, 15830-15839.	5.6	34
35	Abnormal bipolar-like resistance change behavior induced by symmetric electroforming in Pt/TiO ₂ /Pt resistive switching cells. <i>Nanotechnology</i> , 2009, 20, 375201.	2.6	33
36	Threshold resistive and capacitive switching behavior in binary amorphous GeSe. <i>Journal of Applied Physics</i> , 2012, 111, 102807.	2.5	33

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37	Short-term memory of TiO ₂ -based electrochemical capacitors: empirical analysis with adoption of a sliding threshold. <i>Nanotechnology</i> , 2013, 24, 384005.	2.6	33
38	Size effects of metal nanoparticles embedded in a buffer layer of organic photovoltaics on plasmonic absorption enhancement. <i>Journal Physics D: Applied Physics</i> , 2012, 45, 065101.	2.8	31
39	Plasmonic nanograting design for inverted polymer solar cells. <i>Optics Express</i> , 2012, 20, A729.	3.4	29
40	Silicon nanodisk array design for effective light trapping in ultrathin c-Si. <i>Optics Express</i> , 2014, 22, A1431.	3.4	29
41	Pt/Ti/Al ₂ O ₃ /Al tunnel junctions exhibiting electroforming-free bipolar resistive switching behavior. <i>Solid-State Electronics</i> , 2011, 63, 1-4.	1.4	28
42	Effect of density of localized states on the ovonic threshold switching characteristics of the amorphous GeSe films. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	28
43	Plasmonic absorption enhancement in organic solar cells by nano disks in a buffer layer. <i>Journal of Applied Physics</i> , 2012, 111, 103121.	2.5	26
44	Fabrication of parabolic Si nanostructures by nanosphere lithography and its application for solar cells. <i>Scientific Reports</i> , 2017, 7, 7336.	3.3	26
45	Enhanced efficiency of crystalline Si solar cells based on kerfless-thin wafers with nanohole arrays. <i>Scientific Reports</i> , 2018, 8, 3504.	3.3	25
46	A study on the temperature dependence of the threshold switching characteristics of Ge ₂ Sb ₂ Te ₅ . <i>Applied Physics Letters</i> , 2010, 96, .	3.3	24
47	Atomic layer deposition of HfO ₂ thin films using H ₂ O ₂ as oxidant. <i>Applied Surface Science</i> , 2014, 301, 451-455.	6.1	24
48	A Physical Unclonable Function With Redox-Based Nanoionic Resistive Memory. <i>IEEE Transactions on Information Forensics and Security</i> , 2018, 13, 437-448.	6.9	24
49	Tutorial: Neuromorphic spiking neural networks for temporal learning. <i>Journal of Applied Physics</i> , 2018, 124, .	2.5	23
50	Control of the initial growth in atomic layer deposition of Pt films by surface pretreatment. <i>Nanotechnology</i> , 2015, 26, 304003.	2.6	21
51	Recent Progress in Real-Time Adaptable Digital Neuromorphic Hardware. <i>Advanced Intelligent Systems</i> , 2019, 1, 1900030.	6.1	21
52	Improvement of the current-voltage characteristics of a tunneling dielectric by adopting a Si ₃ N ₄ -SiO ₂ -Si ₃ N ₄ multilayer for flash memory application. <i>Applied Physics Letters</i> , 2005, 87, 152106.	3.3	19
53	Triple-Junction Hybrid Tandem Solar Cells with Amorphous Silicon and Polymer-Fullerene Blends. <i>Scientific Reports</i> , 2014, 4, 7154.	3.3	19
54	Enhanced Reconfigurable Physical Unclonable Function Based on Stochastic Nature of Multilevel Cell RRAM. <i>IEEE Transactions on Electron Devices</i> , 2019, 66, 1717-1721.	3.0	19

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55	Nano-Intrinsic True Random Number Generation: A Device to Data Study. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 2615-2626.	5.4	19
56	Structural and optical properties of phase-change amorphous and crystalline Ge _{1-x} Te _x (0x=1) thin films. Physica Status Solidi (Applications and Materials Science), 2013, 210, 267-275.		
57	Improved stability of a phase change memory device using Ge-doped SbTe at varying ambient temperature. Applied Physics Letters, 2010, 96, 133510.	3.3	16
58	Elastic resistance change and action potential generation of non-faradaic Pt/TiO ₂ /Pt capacitors. Nanoscale, 2013, 5, 6363.	5.6	16
59	Multiprotocol-induced plasticity in artificial synapses. Nanoscale, 2014, 6, 15151-15160.	5.6	16
60	Reconfigurable Spike Routing Architectures for On-Chip Local Learning in Neuromorphic Systems. Advanced Materials Technologies, 2019, 4, 1800345.	5.8	16
61	Highly Linear and Symmetric Weight Modification in HfO ₂ -Based Memristive Devices for High-Precision Weight Entries. Advanced Electronic Materials, 2020, 6, 2000434.	5.1	16
62	Enhanced analog synaptic behavior of SiN _x /a-Si bilayer memristors through Ge implantation. NPG Asia Materials, 2020, 12, .	7.9	16
63	Tunneling current from a metal electrode to many traps in an insulator. Physical Review B, 2005, 71, .	3.2	15
64	Controlled recrystallization for low-current RESET programming characteristics of phase-change memory with Ge-doped SbTe. Applied Physics Letters, 2011, 99, 143505.	3.3	15
65	Optical design of transparent metal grids for plasmonic absorption enhancement in ultrathin organic solar cells. Optics Express, 2013, 21, A669.	3.4	15
66	Positive temperature coefficient of resistivity in paraelectric (Ba,Sr)TiO ₃ thin films. Applied Physics Letters, 2004, 84, 94-96.	3.3	14
67	Enhancement of Initial Growth of ZnO Films on Layer-Structured Bi ₂ Te ₃ by Atomic Layer Deposition. Chemistry of Materials, 2014, 26, 6448-6453.	6.7	14
68	Electric-field-induced Shift in the Threshold Voltage in LaAlO ₃ /SrTiO ₃ Heterostructures. Scientific Reports, 2015, 5, 8023.	3.3	13
69	Voltage-induced degradation in self-aligned polycrystalline silicon gate n-type field-effect transistors with HfO ₂ gate dielectrics. Applied Physics Letters, 2004, 85, 5965-5967.	3.3	11
70	Fabrication of ultrathin IrO ₂ top electrode for improving thermal stability of metal-insulator-metal field emission cathodes. Thin Solid Films, 2005, 471, 236-242.	1.8	11
71	Thickness dependence of surface plasmon resonance sensor response for metal ion detection. Journal Physics D: Applied Physics, 2013, 46, 315104.	2.8	11
72	Onion-like carbon as dopant/modification-free electrocatalyst for [VO] ²⁺ /[VO] ⁺ redox reaction: Performance-control mechanism. Carbon, 2018, 127, 31-40.	10.3	11

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73	Hardware-Efficient Emulation of Leaky Integrate-and-Fire Model Using Template-Scaling-Based Exponential Function Approximation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 350-362.	5.4	10
74	First-principles calculations on the energetics of nitrogen-doped hexagonal Ge ₂ Sb ₂ Te ₅ . Journal of Applied Physics, 2010, 107, .	2.5	9
75	Novel Aspect in Grain Size Control of Nanocrystalline Diamond Film for Thin Film Waveguide Mode Resonance Sensor Application. ACS Applied Materials & Interfaces, 2013, 5, 11631-11640.	8.0	9
76	Bipolar switching polarity reversal by electrolyte layer sequence in electrochemical metallization cells with dual-layer solid electrolytes. Nanoscale, 2013, 5, 12598.	5.6	9
77	Orientation-Controlled Growth of Pt Films on SrTiO ₃ (001) by Atomic Layer Deposition. Chemistry of Materials, 2015, 27, 6779-6783.	6.7	9
78	Polarity-tunable spin transport in all-oxide multiferroic tunnel junctions. Nanoscale, 2016, 8, 10799-10805.	5.6	9
79	Inherently-Forced Tensile Strain in Nanodiamond-Derived Onion-like Carbon: Consequences in Defect-Induced Electrochemical Activation. Scientific Reports, 2016, 6, 23913.	3.3	8
80	Random Si nanopillars for broadband antireflection in crystalline silicon solar cells. Journal Physics D: Applied Physics, 2016, 49, 375108.	2.8	8
81	Simplified calcium signaling cascade for synaptic plasticity. Neural Networks, 2020, 123, 38-51.	5.9	8
82	Dielectric constant dispersion of yttrium-doped (Ba,Sr)TiO ₃ films in the high-frequency (10kHz~67GHz) domain. Applied Physics Letters, 2005, 87, 232903.	3.3	7
83	Growth Enhancement and Nitrogen Loss in ZnO _x N _y Low-Temperature Atomic Layer Deposition with NH ₃ . Journal of Physical Chemistry C, 2015, 119, 23470-23477.	3.1	7
84	A study on the temperature dependence of characteristics of phase change memory devices. Applied Physics Letters, 2009, 95, 093504.	3.3	6
85	Multi-level cell storage with a modulated current method for phase-change memory using Ge-doped SbTe. Current Applied Physics, 2011, 11, e79-e81.	2.4	6
86	Dc current transport behavior in amorphous GeSe films. Applied Physics A: Materials Science and Processing, 2011, 102, 1027-1032.	2.3	6
87	Enhanced power conversion efficiency of organic solar cells by embedding Ag nanoparticles in exciton blocking layer. Organic Electronics, 2014, 15, 2414-2419.	2.6	6
88	Chameleonic electrochemical metallization cells: dual-layer solid electrolyte-inducing various switching behaviours. Nanoscale, 2016, 8, 15621-15628.	5.6	6
89	Random nanohole arrays and its application to crystalline Si thin foils produced by proton induced exfoliation for solar cells. Scientific Reports, 2019, 9, 19736.	3.3	6
90	Unipolar Switching in Pt _x GeSe _{1-x} Te _{1-x} Pt. Electrochemical and Solid-State Letters, 2010, 13, G111.	2.2	5

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91	Overview on the Resistive Switching in TiO ₂ Solid Electrolyte. <i>Integrated Ferroelectrics</i> , 2011, 124, 87-96.	0.7	5
92	Scalable excitatory synaptic circuit design using floating gate based leaky integrators. <i>Scientific Reports</i> , 2017, 7, 17579.	3.3	5
93	Enhanced blue responses in nanostructured Si solar cells by shallow doping. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 125102.	2.8	5
94	TS-EFA: Resource-efficient High-precision Approximation of Exponential Functions Based on Template-scaling Method. , 2020, , .		5
95	Dot-Product Operation in Crossbar Array Using a Self-Rectifying Resistive Device. <i>Advanced Materials Interfaces</i> , 2022, 9, .	3.7	5
96	A Ru-Pt alloy electrode to suppress leakage currents of dynamic random-access memory capacitors. <i>Nanotechnology</i> , 2018, 29, 455202.	2.6	4
97	Markov Chain Hebbian Learning Algorithm With Ternary Synaptic Units. <i>IEEE Access</i> , 2019, 7, 10208-10223.	4.2	4
98	Optimal Distribution of Spiking Neurons Over Multicore Neuromorphic Processors. <i>IEEE Access</i> , 2020, 8, 69426-69437.	4.2	4
99	SPSNN: nth Order Sequence-Predicting Spiking Neural Network. <i>IEEE Access</i> , 2020, 8, 110523-110534.	4.2	4
100	eWB: Event-Based Weight Binarization Algorithm for Spiking Neural Networks. <i>IEEE Access</i> , 2021, 9, 38097-38106.	4.2	4
101	Phosphorus ion implantation and POCl ₃ doping effects of n+-polycrystalline-silicon/high-k gate dielectric (HfO ₂ and Al ₂ O ₃) films. <i>Applied Physics Letters</i> , 2004, 84, 2868-2870.	3.3	3
102	The effect of Ge addition on the RESET operation of a phase-change memory (PCM) device using Ge-doped SbTe. <i>Current Applied Physics</i> , 2010, 10, e79-e82.	2.4	3
103	Modified write-and-verify scheme for improving the endurance of multi-level cell phase-change memory using Ge-doped SbTe. <i>Solid-State Electronics</i> , 2012, 76, 67-70.	1.4	3
104	Numerical study on passive crossbar arrays employing threshold switches as cell-selection-devices. <i>Electronic Materials Letters</i> , 2012, 8, 169-174.	2.2	3
105	Neuromorphic Computing: Memristors for Energy-Efficient New Computing Paradigms (<i>Adv. Electron. J. ETQq1</i> 1 0.784314 rgBT /Cv 5.1)	5.1	3
106	Asymmetric back contact nanograting design for thin c-Si solar cells. <i>Current Applied Physics</i> , 2016, 16, 568-573.	2.4	3
107	Co-diffusion of boron and phosphorus for ultra-thin crystalline silicon solar cells. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 275101.	2.8	3
108	Low Energy and Analog Memristor Enabled by Regulation of Ru ion Motion for High Precision Neuromorphic Computing. <i>Advanced Electronic Materials</i> , 2022, 8, .	5.1	3

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109	Improvement of the current-voltage characteristics of a tunneling dielectric by barrier engineering by adopting an atomic-layer-deposited sin layer for flash memory applications. , 0, , .		2
110	Electric-field-enhanced ionic diffusivity in electrolytes: A model study. Journal of the Korean Physical Society, 2012, 61, 913-919.	0.7	2
111	Combination-Encoding Content-Addressable Memory With High Content Density. IEEE Access, 2019, 7, 137620-137628.	4.2	2
112	Stochastic Learning with Back Propagation. , 2019, , .		2
113	Strategic allocation of two-dimensional van der Waals semiconductor as an oxygen reservoir for boosting resistive switching reliability. Applied Surface Science, 2022, 577, 151936.	6.1	2
114	Optical properties of amorphous $\text{Ge}_{1-x}\text{Se}_x$ and $\text{Ge}_{1-x}\text{As}_x\text{Se}_y$ thin films " optical gap bowing and phonon modes. Journal of the Korean Physical Society, 2014, 64, 1726-1736.	0.7	1
115	Artificial Neural Network for Response Inference of a Nonvolatile Resistance-Switch Array. Micromachines, 2019, 10, 219.	2.9	1
116	Hardware Spiking Artificial Neurons, Their Response Function, and Noises. Cognitive Systems Monographs, 2017, , 1-16.	0.1	1
117	<i>A Special Section on</i> Selected Peer-Reviewed Articles from the International Conference on Advanced Electromaterials 2011 (ICAE2011). Journal of Nanoscience and Nanotechnology, 2013, 13, 3254-3259.	0.9	0
118	Population representation of artificial neural network. , 2014, , .		0
119	Random Si Nanopillar Fabrication by Spontaneous Dewetting of Indium for Broadband Antireflection. Journal of Nanoscience and Nanotechnology, 2016, 16, 10644-10648.	0.9	0
120	Pointer Based Routing Scheme for On-chip Learning in Neuromorphic Systems. , 2018, , .		0
121	Greedy Edge-Wise Training of Resistive Switch Arrays. Springer Series in Advanced Microelectronics, 2020, , 177-190.	0.3	0
122	Design and Fabrication of Si Subwavelength Structures for Broadband Antireflection in Mid-Infrared Ranges. Journal of Nanoscience and Nanotechnology, 2017, 17, 8925-8934.	0.9	0
123	FPGA implementation of sequence-to-sequence predicting spiking neural networks. , 2020, , .		0